DISEASE OF SUSPECTED BIOTERRORISM ORIGIN

DISEASE REPORTING

In Washington

DOH has never received a confirmed report of disease of suspected bioterrorism origin. In 1984, a cult based in The Dalles, Oregon – within 20 miles of the Washington border – sprayed *Salmonella* on salad bars at local restaurants in an attempt to cause illness and thereby influence an election. In Washington, state and local public health have responded to many bioterrorism hoaxes, including letters claiming to contain anthrax, by recommending testing when appropriate and working closely with law enforcement agencies.

Purpose of reporting and surveillance

- To notify appropriate agencies and mobilize necessary resources for public health response and possible criminal investigation.

Reporting requirements

- Health care providers: **immediately notifiable to Local Health Jurisdiction**
- Hospitals: **immediately notifiable to Local Health Jurisdiction**
- Laboratories: see disease-specific requirements
- Local health jurisdictions: **suspected or confirmed cases are immediately notifiable to DOH Communicable Disease Epidemiology: 1-877-539-4344**

CASE DEFINITION FOR SURVEILLANCE

See disease-specific guidelines.

EPIDEMIOLOGIC CLUES THAT MAY SIGNAL A POSSIBLE BIOTERRORISM EVENT

- Large numbers of ill persons with a similar disease or syndrome.
- Large numbers of cases of unexplained diseases or deaths.
- Unusual illness in a population (e.g., renal disease in a large population may suggest exposure to a toxic agent such as mercury).

- Higher morbidity and mortality in association with a common disease or syndrome or failure of such patients to respond to usual therapy.

- Single case of disease caused by an uncommon agent (e.g., *Burkholderia mallei* or *B. pseudomallei*, smallpox, viral hemorrhagic fever, pulmonary anthrax)

- Several unusual or unexplained diseases coexisting in the same patient without any other explanation.

- Disease with an unusual geographic or seasonal distribution (e.g., tularemia in a nonendemic area, influenza in the summer).

- Illness that is unusual (or atypical) for a given population or age group (e.g., outbreak of measles-like rash in adults).

- Unusual disease presentation, (e.g., pulmonary instead of cutaneous anthrax).

- Similar genetic type among agents isolated from distinct sources at different times or locations.

- Unusual, atypical, genetically engineered, or antiquated strain of an agent (or antibiotic resistance pattern).

- Stable endemic disease with an unexplained increase in incidence (e.g., tularemia, plague).

- Simultaneous clusters of similar illness in noncontiguous areas, domestic or foreign.

- Aerosol route of infection or other atypical pattern of disease transmission.

- Ill persons who seek treatment at about the same time (point source with compressed epidemic curve).

- No illness in persons who are not exposed to common ventilation systems (have separate closed ventilation systems) when illness is seen in persons in close proximity who have a common ventilation system.

- Unusual pattern of death or illness among animals, (which may be unexplained or attributed to an agent of bioterrorism) that precedes or accompanies illness or death in humans.

Reference: Biological Warfare & Terrorism, The Military and Public Health Response, Satellite Broadcast, September 21-23, 1999.

BIOTERRORISM AGENT CATEGORIES

The Centers for Disease Control and Prevention (CDC) classifies potential bioterrorist agents into three categories.

Category A

The US public health system and primary healthcare providers must be prepared to address varied biological agents, including pathogens that are rarely seen in the United States. High-priority agents include organisms that pose a risk to national security because they

- ❖ can be easily disseminated or transmitted person-to-person,
- ❖ result in high mortality rates and have the potential for major public health impact,
- ❖ might cause public panic and social disruption, and
- ❖ require special action for public health preparedness.

Category A agents include

- Anthrax (*Bacillus anthracis*)
- Smallpox (variola major)
- Plague (*Yersinia pestis*)
- Botulism (*Clostridium botulinum* toxin)
- Tularemia (*Francisella tularensis*)
- Filoviruses (e.g., ebola hemorrhagic fever, marburg hemorrhagic fever)
- Arenaviruses (e.g., Lassa (Lassa Fever), Junin (Argentine hemorrhagic fever) and related viruses)

Category B

The second highest priority agents include those that

- ❖ are moderately easy to disseminate,
- ❖ result in moderate morbidity rates and low mortality rates, and
- ❖ require specific enhancements of CDC's diagnostic capacity and enhanced disease surveillance.

Category B agents include

- Brucellosis (*Brucella* species)
- Epsilon toxin of *Clostridium perfringens*
- Food safety threats (e.g., *Salmonella* species, *Escherichia coli* O157:H7, *Shigella*)
- Glanders (*Burkholderia mallei*)
- Melioidosis (*Burkholderia pseudomallei*)
- Psittacosis (*Chlamydia psittaci*)
- Q Fever (*Coxiella burnetti*)

- Ricin toxin from *Ricinus communis* (castor beans)
- Staphylococcal enterotoxin B
- Typhus fever (*Rickettsia prowazekii)*
- Viral encephalitis (e.g., Venezuelan equine encephalitis, eastern and western equine encephalitis)
- Water safety threats (e.g., V*ibrio cholerae, Cryptosporidium parvum*)

Category C

Third highest priority agents include emerging pathogens that could be engineered for mass dissemination in the future because of

- availability,
- ease of production and dissemination, and
- potential for high morbidity and mortality rates and major health impact.

Category C agents include

- emerging infectious disease threats such as Nipah virus and hantavirus

Preparedness for List C agents requires ongoing research to improve disease detection, diagnosis, treatment, and prevention. Knowing in advance which newly emergent pathogens might be employed by terrorists is not possible; therefore, linking bioterrorism preparedness efforts with ongoing disease surveillance and outbreak response activities as defined in CDC's emerging infectious disease strategy is imperative.

Reference: www.bt.cdc.gov/agent/agentlist.asp